Claims

1. A method for the producing a flexographic printing plate, which has a base layer and a layer of a light sensitive material attached on the base layer, of the type according to which an image is produced on the light sensitive layer by bringing about a selective crosslinking by insolation of the zones which are to be crosslinked using light with a predetermined wavelength and by removal of the non-crosslinked zones, characterized by the fact that for the insolation, an amplitude modulated laser light is used, whose wavelength is on the order of 390 to 410 nm, and which is made to sweep the surface of the light sensitive layer.

2. A method according to Claim 1, characterized by the fact that one uses laser sources consisting of a bundle of diodes functioning at wavelengths around 405 nm.

3. A method according to either of Claims 1 and 2, characterized by the fact that the removal of the non-crosslinked zones is done by liquefying of these zones by thermal means, without the use of solvents.

4. A method according to Claim 3, characterized by the fact that ones uses a light sensitive material formulated in such a way that the material not crosslinked by the laser light has a great variation of viscosity at a temperature advantageously between 60 and 140°C, and that the material of the crosslinked zones is completely incapable of melting at this temperature or becomes meltable at a temperature much higher than the temperature of variation of viscosity.

5. A method according to one of Claims 1 to 4, characterized by the fact that the light sensitive material contains one or more high molecular weight polymers, functionalized monomers or oligomers, photo-initiators, reactive or non-reactive diluents, inhibitors and protective agents, and if necessary, pigments.

6. A method according to one of Claims 1 to 5, characterized by the fact that the light sensitive material is a photo-polymer containing at least two complementary crosslinking systems.

7. A method according to Claim 6, characterized by the fact that a main system is used to create the image.

8. A method according to Claim 6 or 7, characterized by the fact that a complementary system is used to complete the crosslinking and to increase the chemical and mechanical resistance.

9. A method according to one of Claims 6 to 8, characterized by the fact that a complementary system is used to generate different compressibilities.

10. A method according to one of Claims 6 to 9, characterized by the fact that the photo-polymer can be pre-crosslinked partially in order to adjust the viscosity or to prevent cold creep during prolonged storage periods or transport.

11. A method according to one of Claims 6 to 10, characterized by the fact that the photo-polymer can be sensitized by a flash of light before writing of the image by laser, in order to increase the effectiveness of this writing.

12. A method according to one of Claims 1 to 11, characterized by the fact that the aforementioned sensitive material is a polymer with a hardness between 60 and 70 ShA approximately.

13. A method according to one of Claims 1 to 12, characterized by the fact that the energy used for the insolation is between 20 and 1000 mJ/cm^2.

14. A method according to one of Claims 1 to 13, characterized by the fact that the plate is obtained by thermal projecting of pre-formulated powders onto a support sleeve.

15. A method according to one of Claims 1 to 14, characterized by the fact that several lasers acting in parallel are used.

16. A flexographic printing plate obtained according to one of Claims 1 to 15, characterized by the fact that it is in the form of tubular sleeve (1) on a rigid support, which has composite base (4) and, attached on this base, layer (5) made of light sensitive material which is free of solvents.

17. An arrangement according to Claim 16, characterized by the fact that composite base (4) has a thickness between approximately 0.2 and 40 mm, and preferably 0.3 mm.

18. An arrangement according to either of Claims 16 and 17, characterized by the fact that layer (5) of the light sensitive material has a thickness between 0.5 and 2 mm, and preferably 1.5 mm.

19. An arrangement according to one of Claims 16 to 18, characterized by the fact that sleeve (1) has compressible layer (6).

20. An arrangement according to one of Claims 16 to 19, characterized by the fact that associated with sleeve (1) is a sleeve containing inserted layer (8) for variation of the thickness of the sleeve.

21. An arrangement according to Claim 20, characterized by the fact that inserted layer (8) is compressible.

22. An arrangement according to one of Claims 16 to 21, characterized by the fact that tubular sleeve (1) is produced by extrusion.

23. An arrangement according to one of Claims 16 to 21, characterized by the fact that tubular sleeve (1) is obtained by rolling and attachment of a plate on a support cylinder or sleeve.

24. An arrangement according to one of Claims 16 to 21, characterized by the fact that tubular sleeve (1) is a sleeve obtained by thermal projecting of pre-formulated powders onto a support cylinder or sleeve.

25. An arrangement according to one of Claims 16 to 24, characterized by the fact that the rigid support is formed by a base made of polyester film of the flexographic printing plate.

26. An arrangement according to one of Claims 16 to 25, characterized by the fact that flexographic printing plate (1) has a number of layers of light sensitive material.

27. An arrangement according to one of Claims 16 to 26, characterized by the fact that flexographic printing plate (1) can be etched with water or with an aqueous solution under pressure, at high temperature or by simple brushing.